USPTO Customer No. 25280 Case 5752

REMARKS

Restriction / Election

Claims 1-32 are pending the above-referenced application. Restriction to one of the following inventions was required under 35 USC 121:

I. Claim 1 – 8, drawn to a finish composition comprising two urethane polymers, classified in class 525, various subclasses;

II. Claims 9 – 20, drawn to a process for making a flame retardant coated fabric, classified in class 427, various subclasses; or

III. Claims 21 – 32, drawn to a flame retardant coated fabric, classified in class 442, subclass 302.

In a telephone conversation with the Examiner on December 5, 2005, the undersigned Agent for Applicant made a provisional election, with traverse, to prosecute the Claims of Group III (Claims 21 – 32). Applicant hereby confirms this election.

Rejection under 35 USC 103

Claims 21-32 are rejected under 35 USC 103(a) as being unpatentable over US Patent 4,104,222 to DATE et al. in view of US Patent 5,981,407 to MATSUMOTO et al.

Comment 7(a) of the Office Action is provided below:

> DATE et al. teach a dispersion of linear polyester resin for use in improving the physical properties of polymer articles. The dispersion may be used as a coating or impregnant. The linear polyester resins used in the invention include those produced from aliphatic carboxylic acids and resulting in aliphatic polyester resins. The compositions of the applied invention may be used on nonwoven, woven, or knitted fabrics. Example 3 teaches a first to second polyurethane polymer ratio of 19:1. DATE et al. teach the use of a number of aliphatic polyester copolymers. The coating of DATE may be used in

> processing of flame retardant textile products. The Examiner takes the position that a urethane copolymer that anticipates the instantly claimed ratio levels on a solids basis reads on the polymeric limitations of independent Claim 21.

The DATE reference teaches the creation of polyester resins that are obtained by mixing a linear polyester resin with a higher alcohol/ethylene oxide addition type surface-active agent, melting the mixture, and dispersing it by pouring it into an aqueous solution of an alkali. (Abstract) Applicant believes the Office has misinterpreted the DATE reference, with respect to Example 3 in particular. In Example 3, DATE teaches the use of a polyester/polyether copolymer. Nowhere in Example 3 or in the entirety of the DATE reference is there a teaching or suggestion of the use of polyurethane resins, as is presently claimed by the Applicant.

Applicant's disclosure teaches the combination of two different urethanes to form a polymer finish on a flame retardant fabric. Specifically contemplated are polyester polyurethanes, polyether polyurethanes, and polycarbonate polyurethanes. Polyester urethanes are produced by reacting a diisocyanate and a polyester polyol in the presence of a catalyst. Similarly, polyether urethanes are produced by reacting a diisocyanate and a polyether polyol in the presence of a catalyst. Polycarbonate polyol and diisocyanate, when reacted in the presence of a catalyst, produce polycarbonate polyurethanes. Thus, polyester resins (as taught by DATE) are not the same as polyester polyurethanes (as taught by Applicant).

Comment 7(b) of the Office Action is provided, in relevant part, below:

> Although DATE et al. does not explicitly teach the claimed features of the first urethane polymer having an elongation at break of at least 500% and the second urethane polymer having an elongation at break of at least 500%, it is reasonable to presume that said properties are inherent to DATE. Support for said presumption is found in the use of like materials (i.e., first and second urethane polymers at the instantly claimed levels).

> In addition, the presently claimed properties of the first urethane polymer having an elongation at break of at least 500% and the second urethane polymer having an elongation at break of at least 500% would obviously have been present once the DATE product is provided. The invention of DATE is silent as to the use of flame retardant fabrics.

Applicant respectfully reiterates that the DATE reference entirely fails to teach or suggest the use of urethane polymers, teaching only the use of various polyester resins. To clarify what may be a typographical error in the Office Action, the Applicant is claiming a second urethane polymer with an elongation at break of less than 500%. Because the DATE reference fails to teach or suggest the materials claimed by Applicant, the reference then inherently fails to teach the properties provided by Applicant's materials. Failing to teach such materials (specifically, the use of two different urethane polymers), the DATE reference does not provide a product that would render obvious the fabric product claimed by Applicant.

Applicant concurs that the DATE reference is silent as to the use of flame retardant fabrics. For that teaching, the Office Action turns to the MATSUMOTO reference, as described in comments 7(c), (d), and (e).

> MATSUMOTO et al. teach a flame retardant fabric (Abstract) comprising a halogen-containing polyester fiber. The halogen-containing fiber may comprise a phosphorous compound such as tris(2,3-dichloropropyl) phosphate.
>
> Since DATE and MATSUMOTO are from the same field of endeavor (i.e., flame retardant fabrics), the purpose disclosed by MATSUMOTO would have been recognized in the pertinent art of DATE.
>
> It would have been obvious to have made the article of DATE with the flame retardant cloth of MATSUMOTO. The skilled artisan would have been motivated by the desire to make the article flame retardant.

The Office Action also suggests that the clarity of Applicant's polymeric coating, the add-on levels of the coating, the ability of the coating to pass the NFPA Small Scale 701 Vertical Flame Test (1989), and the hand of the coated textile are also obvious, based on the teachings of DATE and MATSUMOTO.

From Applicant's understanding, MATSUMOTO is directed to a flame retardant fabric made from three different fiber types: a halogen-containing fiber, a polyvinyl alcohol fiber, and a common polyester fiber. The fabric has excellent heat resistance and is suitable for transfer printing. The halogen-containing fiber provides flame retardance to the fabric. MATSUMOTO does not teach or suggest the use of polymer coatings in conjunction with their flame retardant fabric.

The Office suggests that the DATE reference is directed to the same field of endeavor as the MATSUMOTO reference, that being to the area of flame retardant fabrics. Applicant respectfully disagrees. The only mention of flame retardance in the DATE reference is as part of an extensive list (Col. 3, lines 10-47) of possible uses of the polyester dispersion described and claimed by DATE. Even in this list, DATE does not teach that their polymer dispersion itself is flame retardant, but that it is useful as "softeners in durable press processing and flame retardant processing of textile products." Applicant interprets this phrase to mean that the polymer dispersion itself does not possess flame retardant properties, but merely facilitates processing of textile products where flame retardant agents are present. Therefore, Applicant rejects the premise that DATE and MATSUMOTO are from the same field of endeavor.

MPEP 2143.01 states, in part: "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some

teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art."

Applicant submits that the combination of DATE and MATSUMOTO fails to satisfy this standard. Because the references are directed to different fields of endeavor, there is no logical reason to make the combination suggested by the Office Action. DATE teaches a polyester dispersion that may be used in the processing of flame retardant textiles. MATSUMOTO teaches a fabric that is flame retardant due to chosen fiber types and which does not include the use of a polymer coating. Accordingly, there is no teaching, suggestion, or motivation to combine the teachings of these references.

Furthermore, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) Nothing in the MATSUMOTO reference suggests that a polymer coating (for example, as taught by DATE) would further enhance the properties of the fabric. DATE, similarly, does not provide any specific teaching of the desirability of modifying a flame retardant fabric (such as that taught by MATSUMOTO) with a polymer dispersion.

MPEP 2143.03 states: "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)."

Even if the DATE and MATSUMOTO references were combined as has been suggested, they fail to provide a teaching of all of the elements of Applicant's claims. Specifically, neither reference provides a teaching of a polymer finish comprised of two different urethane polymers,

one of which has a high elongation and the other of which has a low elongation. Because the references do not teach urethane polymers of these types in combination with one another, the references also fail to teach or suggest the appropriate ratio of the high elongation urethane to the low elongation urethane.

Because there is no motivation in the references themselves to make the proposed modifications, and because the references, when combined, fail to teach all of the limitations of Applicant's claims, Applicant respectfully submits that no *prima facie* case of obviousness has been established.

For this reason, Applicant respectfully submits that the rejection is improper and requests that it be withdrawn.

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CONCLUSION

In view of the previous remarks, Applicants respectfully submit that this application is now in condition for allowance. Entry of this Amendment and issuance of a Formal Notice of Allowance is courteously solicited.

Should any issues remain after consideration of these Remarks, the Examiner is invited and encouraged to telephone the undersigned in the hope that any such issue may be resolved promptly and satisfactorily.

This response is accompanied by a Petition for Extension of Time (one month). In the event that there are additional fees associated with the submission of these papers (including extension of time fees), authorization is hereby provided to withdraw such fees from Deposit Account No. 04-0500.

Respectfully submitted,

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